



Claim 1

Re.: U.S. Patent Application No. 06/652,421  
VIBRATORY CONVEYING APPARATUS ADAPTED TO  
BE DRIVEN BY A PLURALITY OF ACCUMUTIVELY  
PHASED PAIRS OF ROTATING ECCENTRIC WEIGHTS  
Our Ref: 921112/910951

EXAMINER  
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1. (Currently Amended) A vibratory conveying apparatus adapted to vibrate and to convey material, said vibratory conveyor apparatus including:
  - a bed on which the material is conveyed in a direction;
  - a plurality of drive springs, each said drive spring having a first end, a second end and a central axis, said first end of each said drive spring being attached to said bed, each said drive spring adapted to compress and extend along a line of stroke generally parallel to said central axis of said drive spring;
  - a plurality of included stabilizers, each said stabilizer having a first end, a second end and a longitudinal axis, said first end of each said stabilizer being attached to said bed, said longitudinal axis of each said stabilizer being generally perpendicular to said central axis of a drive spring, each said stabilizer being more rigid in a direction transverse to said line of stroke than said stabilizer is rigid in the direction of said line of stroke, said stabilizers allowing movement of each said drive spring generally parallel to said central axis of said drive spring and inhibiting movement of each said drive spring generally transversely to said central axis of said drive spring;
  - a first pair of rotatable eccentric weights coupled to said bed, said first pair of rotatable eccentric weights including a first rotatable eccentric weight and a second rotatable eccentric weight each adapted to rotate about a first axis extending generally perpendicular to the direction the material is conveyed; and
  - a second pair of rotatable eccentric weights coupled to said bed, said second pair of rotatable eccentric weights including a third rotatable eccentric weight and a fourth rotatable eccentric weight each adapted to rotate about a second axis extending generally perpendicular to the direction the material is conveyed, the first and second axes being spaced along the direction the material is conveyed, said rotatable eccentric weights being free-wheeling with respect to one another and adapted to rotate at substantially the same operating speed with respect to one another, each said rotatable eccentric weight adapted to provide an output force generally perpendicular to its axis of rotation, said rotatable eccentric weights adapted to accumulatively synchronize with one another;whereby rotation of said first pair of rotatable eccentric weights and rotation of second pair of rotatable eccentric weights, in combination with said stabilizers, accumulatively synchronize such that the output forces of said rotatable eccentric weights and their respective power outputs accumulatively add to cause said bed to vibrate along said central axes of said drive springs.